ISSN (print) 0093-4666 © 2015. Mycotaxon, Ltd. ISSN (online) 2154-8889

MYCOTAXON

http://dx.doi.org/10.5248/130.489

Volume 130, pp. 489–493 *April–June 2015*

Brachycephala exotica, a new hyphomycete from Brazil

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Abstract — *Brachycephala exotica* gen. & sp. nov., is described and illustrated. *Brachycephala exotica* is characterized by distinct single conidiophores and monoblastic conidiogenous cells that produce solitary acrogenous 2–3-septate dark subglobose conidia with 1–3 branches that arise from the basal conidial cell to form scorpioid branched conidiophores.

Key words — asexual fungi, systematics, leaf litter, tropical fungi

Introduction

During investigations of microfungi on dead plant material in a semi-arid region of northeast Brazil an interesting fungus was collected on decaying leaves of an unidentified plant. It showed remarkable differences from all previously described hyphomycete genera (Seifert et al. 2011) and is therefore described here as new.

Materials & methods

Samples of submerged litter were placed in paper bags, taken to the laboratory, and treated according to Castañeda-Ruiz (2005). Mounts were prepared in PVL (polyvinyl alcohol, lactic acid, and phenol) and measurements were taken at ×1000. Micrographs were obtained with an Olympus microscope (model BX51) equipped with bright field and Nomarski interference optics. The holotype is deposited in the Herbarium of Universidade Estadual de Feira de Santana, Bahia, Brazil (HUEFS).

Taxonomy

Brachycephala J.S. Monteiro, Gusmão & R.F. Castañeda, **gen. nov**.

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Differs from *Monotosporella* by its scorpioid, branched conidiophores and rhexolytic conidial secession and from *Brachysporiella* and *Melanocephala* by its scorpioid, branched conidiophores.

Type Species: *Brachycephala exotica* J.S. Monteiro et al.

Etymology: From the Greek: *brachy-*, referring to the branched conidiophores + *-cephala*, referring to the head-shaped conidia.

Asexual fungi. Colonies on the natural substratum, hairy to funiculose, black. Mycelium superficial and immersed. Conidiophores of two types: i) distinct, single, flexuous, unbranched below, branching at the basal cell of the conidium, cylindrical, septate, smooth, brown to dark brown; ii) secondary, tertiary, quaternary, distinct, straight or slightly flexuous to somewhat curved, septate, smooth, pale brown, arising from the basal cell of each conidium, forming scorpioid branches. Conidiogenous cells monoblastic, integrated, terminal, determinate or indeterminate with several percurrent extensions, cylindrical, pale brown. Conidial secession rhexolytic. Conidia solitary, acrogenous, septate, pyriform to obovoid to globose, brown, dark brown or black, smooth, often branching at the apex of the basal cell.

Brachycephala exotica J.S. Monteiro, Gusmão & R.F. Castañeda, **sp. nov.** Figs 1, 2

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Differs from *Brachysporiella*, *Monotosporella*, and *Melanocephala* spp. by scorpioid branched conidiophores originating at the basal cell of the conidium.

Type: Brazil, Ceará State, Quiixadá, Reserva Particular do Patrimônio Natural Frazenda Não Me Deixes, 4°49 S 38°58 W, on decaying leaves of an unidentified plant, 1 April 2014, coll. D.S. Alfredo & J.O. Souza (**Holotype**: HUEFS 210446).

Etymology: From the Latin: *exotica,* referring to the unusual or uncommon branched conidiophores.

Colonies on the natural substratum, hairy to funiculose, black. Mycelium superficial and immersed. Conidiophores of two types: i) distinct, single, flexuous, unbranched below, but branched at the basal cell of the conidium near its apex, 75–200 × 4–7 µm, cylindrical, inflated at the base, 4–7 septate, smooth, brown to dark brown below, pale brown toward the apex; ii) secondary, tertiary or quaternary conidiophores, distinct, straight or slightly flexuous to somewhat curved, 0–2-septate, smooth, pale brown, 15–50 × 2–4 µm, arising from the basal cell of each conidium, forming scorpioid branches. Conidiogenous

Fig. 1. *Brachycephala exotica* (holotype, HUEFS 210446). A. Conidium and conidiogenous cell. B–L. Conidia. M–O. Conidiophores, conidiogenous cells, and conidia. Scale bars: A–L = 10 µm; M–O = 20 µm.

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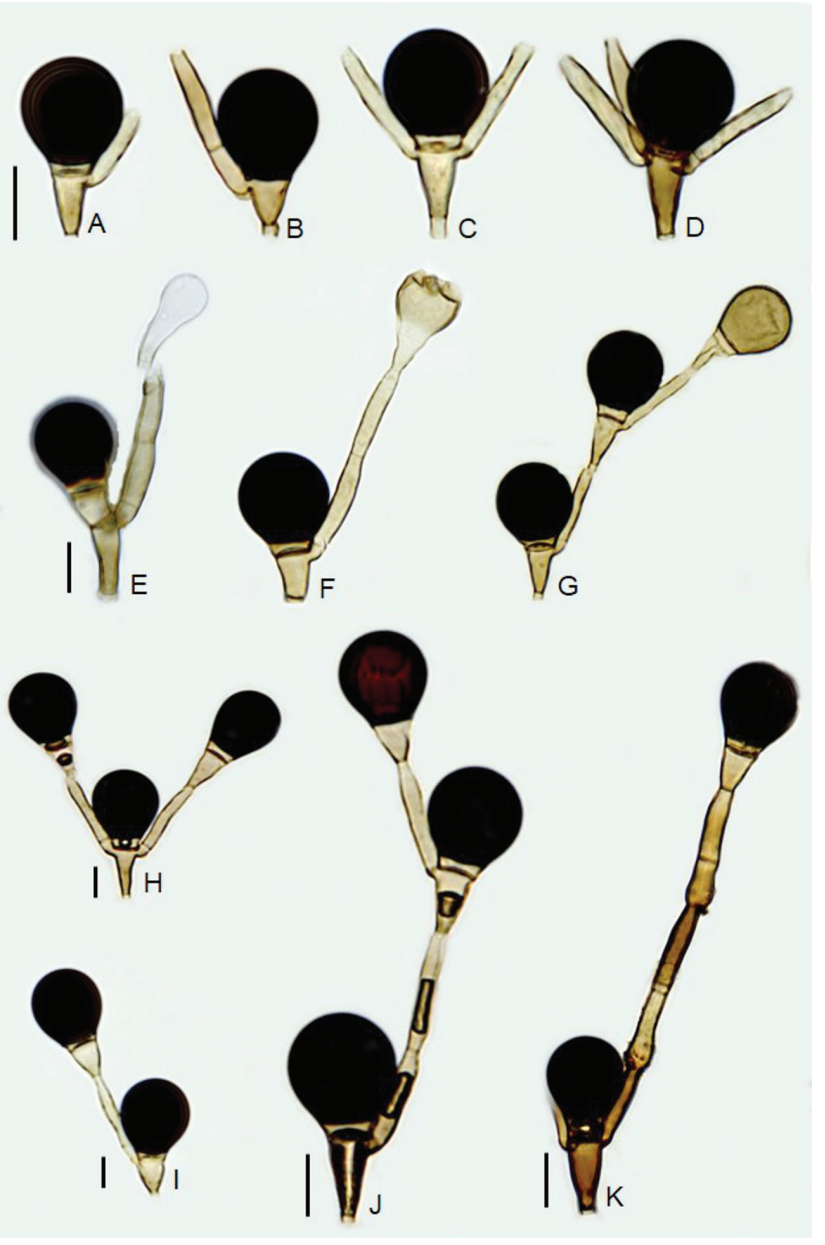

Fig. 2. *Brachycephala exotica* (holotype, HUEFS 210446). A–D. Conidia and branches formed in the basal cell. E–F. Conidia and secondary conidiophores. G–K. Conidia and secondary and tertiary conidiophores in scorpioid branches. Scale bars = 10 μm.

CELLS monoblastic, integrated, terminal, determinate or indeterminate, with several percurrent extensions, cylindrical to subulate, 10–20 × 3–6 µm, pale brown. Conidial secession rhexolytic. CONIDIA solitary, acrogenous 1–3-septate, mostly 2-septate. pyriform to obovoid to globose, 20–37 × 8–16 µm, dark brown or black at the apical cell, pale brown to brown lower cells, smooth, often with 1–3 branches arising from the upper part of the basal cell.

NOTE: The scorpioid branches arising from the basal cell of the conidia of *Brachycephala* are unique among hyphomycetes (Seifert et al. 2011) and are similar only to those of some members of the *Mucoraceae* (*Zygomycota*). *Brachycephala* superficially resembles *Acarocybellina* Subram., *Brachysporiella* Bat., and *Kramabeeja* G.V. Rao & K.A. Reddy, but in these genera the branches arise from the axis of the conidiophores (Seifert et al. 2011).

Acknowledgments

The authors express their sincere gratitude to Prof. Bryce Kendrick and Dr. De-Wei Li for their critical review of the manuscript. The authors are grateful to the "Programa de Pesquisa em Biodiversidade" – (PPBio Semi-arid/MCTI/CNPq) for financial support. The authors thank the support provided by "Programa Ciência sem Fronteiras." RFCR is grateful to Cuban Ministry of Agriculture and "Programa de Salud Animal y Vegetal", project P131LH003033 for facilities. We acknowledge the assistance provided by Dr. P.M. Kirk and Drs. V. Robert and A. Decock through the IndexFungorum and MycoBank websites. Dr. Lorelei Norvell's editorial and Dr. Shaun Pennycook's nomenclatural reviews are greatly appreciated.

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